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09/910,762	07/24/2001	Chen-Lun Hsing Chen	LIE 140	3569

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EXAMINER

GUHARAY, KARABI

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 06/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	HSING CHEN ET AL.
Examiner Karabi Guharay	Art Unit 2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.

If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.

If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.

Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on ____.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-18 is/are pending in the application.

4a) Of the above claim(s) ____ is/are withdrawn from consideration.

5) Claim(s) ____ is/are allowed.

6) Claim(s) 1-18 is/are rejected.

7) Claim(s) ____ is/are objected to.

8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on ____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. ____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.

4) Interview Summary (PTO-413) Paper No(s) ____.
5) Notice of Informal Patent Application (PTO-152)
6) Other: ____.

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Amendment A, filed on March 19, 2003 has been considered and entered.

Amendment of title has been acknowledged.

Claims 1 and 5 are amended, and new claims 7-18 are added.

Amendments of claim 5, overcome the rejection of claim 5 under 35 U.S.C 112 second paragraph.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claim 9 recites that the circuit board includes plurality of

holes, which is not mentioned in specification.

The amendment A, filed on March 19, 2003, is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: Claim 17 recites that the display panel is coated with a lacquer.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Objections

Claim 1 is objected to because of the following informalities: Each claim should end with a period. In this case, period is missing. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 17 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Display panel is coated with lacquer as claimed in claim 17 is not disclosed in original disclosure.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7, 10-15 & 17-18, are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (US 6439731).

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Regarding claims 1, 7 & 10-12, Johnson discloses a display module (see Fig 1 and Fig 2) comprising plurality of light emitting elements (illumination source 12, including plurality of LEDs, lines 4-6 of column 5), a plate (heat sink 22, lines 65 of column 7- line 3 of column 8), a circuit board (PCB 10), and a rectangular display panel (optical chamber 16 including LCD panel 18) having two primary surfaces and four lateral sides, the plate (heat sink 22, see Fig 2) being arranged with the light emitting elements (12) and the circuit board (10) being arranged or positioned on a lateral side (16C) or around the display panel (optical chamber 16, on which LCD display 18 is mounted, lines 34-35 of column 6, see Fig 1 & 2).

However, Johnson does not explicitly mention that the plate used as heat sink 22 is a metal plate, metal plates are well known suitable material for heat sink for their excellent thermal conductivity (see US 6465858). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use metal plate for heat sink of Johnson's device, since it has been held to be within the general skill of an worker in the art to select a known material on the basis of its suitability for the intended use.

Further Johnson does not explicitly mention that that the LEDs have lens being formed atop the light-emitting element, however, having a lens is an intrinsic structure of an LED device (see US 6,480389 & US 4729076).

Moreover Johnson uses direct chip attach bonding instead of claimed wire bonding. It is noted that applicant's specific method of bonding light emitting elements to the circuit board does not solve any of the stated problems or yield any unexpected

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result that is not within the scope of the teachings applied. Therefore it is considered to be a matter of choice, which a person of ordinary skill in the art would have found obvious to select one of known standard bonding techniques, such as DCA , wirebonding, tab bonding or solder bump etc.

Regarding claims 2 & 13, Johnson discloses that the light-emitting element is LED (lines 4-6 of column 5).

Regarding claim 3, Johnson discloses that the light emitting elements (12) on the circuit board (10) and heat sink 22 forms a layered assembly (lines 2-8 of column 8, see Fig 2), which indicates adhesive or glue is used to make layered structure.

Regarding claims 4 & 14-15, Johnson discloses that the light emitting elements emit light with same color or different color (lines 36-39 of column 5).

Regarding claim 5, Johnson discloses that the display panel is of rectangular shape (lines 34-39 of column 6).

Regarding claim 6, Johnson discloses that the display panel (16 including LCD device 18) is coated with light reflecting lacquer on backside thereof (lines 45-47 of column 6).

Regarding claim 8, Johnson discloses that the four lateral sides are disposed at outer periphery of the two primary surfaces (front and back surface of display panel16) forming a cuboid.

Regarding claim 17, and 18, Johnson discloses that the display panel 16 is coated with a lacquer (line 65 of column 4), and discloses highly reflective finish.

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Claims 9, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. as applied to claim 1 above, and further in view of Hochstein (US 6428189).

Regarding claim 9, Johnson discloses all the limitations of claim 9, except for the limitation of circuit board including plurality of the holes and light emitting elements are fitted through the holes to be mounted on the plate. However, Hochstein discloses an array of light emitting device (Fig 1) arranged on a heat sink (metal plate 30) wherein the circuit board (12) including plurality of holes (32) through which light emitting elements 20 are fitted to the plate 30 (see Abstract), in order to efficiently convey heat from the LED to the heat dissipater plate 30. Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to include plurality of holes in the circuit board as disclosed by Hochstein in the device of Johnson so as to have efficient heat dissipation from the LEDs.

Regarding claim 16, Hochstein discloses that the LEDs are adhered to plate (30) by an insulating thermal glue (38, lines 19-23 of column 3).

Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure :

Iida et al. (US 6465858); Smith et al. (US 5613861); Shie et al. (US 6480389).

Response to Arguments

Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is (703) 305-1971. The examiner can normally be reached on Monday-Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2956.

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A. Guharay